

A LONG-TERM STUDY OF THE IMPACT OF A 360 FEEDBACK PROCESS ON SELF-OTHERS' AGREEMENT AND PERFORMANCE

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INTRODUCTION

One basic proposition underlying the use of 360 feedback is that the comparison of self-evaluations of skills to those by others will help individuals see themselves as others see them and that this in turn will motivate them to improve (e.g., Smither, London, Vasiliopoulos, Reilly, Millsap, & Salvemini, 1995). A corollary to this proposition is that the greater the improvement in self-other agreement, the greater the improvement in performance (e.g., Smither, London, & Reilly, 2005).

Neither the proposition nor the corollary has been widely investigated. The majority of the research that has been reviewed on 360 feedback has been based on what could be described as one-shot case studies (e.g., Smither, London & Reilly, 2005). In addition, the majority of the research that has been reviewed on self-other agreement has been based on what could be described as panel data (e.g., Heidemeier & Moser, 2009).

Other research can also cast doubt on self-other agreement as a singular measure (e.g., Shipper & Davy, 2002). For example, where self-other agreement was hypothesized and tested in a structural model, support was found for two distinct factors – interactive skills and initiating skills (Shipper & Davy, 2002). In addition, the researchers found a complex relationship between self and others' evaluations of skills and performance.

Another set of issues that has been raised in some of the literature on self and others' evaluations is (1) does overestimating of skills have different impact than accurate estimating, (2) does underestimating of skills have different impact than accurate estimating, and (3) does overestimating of skills have different impact than underestimating? Some of the research on self and others' ratings focus on accuracy and do not treat overestimating differently than underestimating (e.g. Atwater, Wang, Smither, & Fleenor, 2009), while others have (e.g., Vecchio & Anderson, 2009). When overestimating and underestimating have been tested, the results suggest that their impact on performance may differ.

To consolidate the issues discussed into testable hypotheses, five sets of hypotheses were generated. First, to test whether greater agreement across both sets of skills occurs over time between self and others' evaluations the following two hypotheses were tested:

H1a: The difference in absolute value between self and others' evaluations of interactive skills will decrease over multiple integrations of the 360 feedback process.

H1b: The difference in absolute value between self and others' evaluations of controlling skills will decrease over multiple integrations of the 360 feedback process.

Second, to test for whether overestimating or underestimating of interactive and controlling skills impacts changes in skills, respectively, the following two hypotheses were tested:

H2a: Changes in interactive skills observed at time $n+1$ will be associated with overestimating versus underestimating of same skills at time n .

H2b: Changes in controlling skills observed at time $n+1$ will be associated with overestimating versus underestimating of same skills at time n .

Third, to test whether the absolute value of the difference between self and others' evaluations of interactive skills impacts the changes in skills, respectively, the following two hypotheses were tested:

H3a: Changes in interactive skills observed at time $n+1$ will be associated with the absolute difference between self and others' evaluations of the same skills at time n .

H3b: Changes in controlling skills observed at time $n+1$ will be associated with the absolute difference between self and others' evaluations of the same skills at time n .

Fourth, to test for whether overestimating or underestimating of interactive and controlling skills impacts changes in performance, the following two hypotheses were tested:

H4a: Changes in performance observed at time $n+1$ will be associated with overestimating versus underestimating of interactive skills at time n .

H4b: Changes in performance observed at time $n+1$ are associated with overestimating versus underestimating of controlling skills at time n .

Fifth, to test whether the absolute value of the difference between self and others' evaluations of interactive skills impacts the changes in performance, the following two hypotheses were tested:

H5a: Changes in interactive skills observed at time $n+1$ are associated with the absolute difference between self and others' evaluations of the same skills at time n .

H5b: Changes in controlling skills observed at time $n+1$ are associated with the absolute difference between self and others' evaluations of the same skills at time n .

Because the second, third, fourth and fifth set of hypotheses could be also either competing or complementary hypotheses, they were tested simultaneously.

METHOD

This study was derived from a middle-level management development program that was tracked for approximately 15 years and incorporated action research. Changes in the program are described in detail elsewhere (Shipper, 2009). With five observations this field study can be viewed as a series of four pretest-posttest designs (Campbell & Stanley, 1963). The data were gathered to monitor, evaluate and adjust the management development program as it occurred.

Sample

The sample consisted of 13,661 managers of a large multi-national technology-driven firm who participated in the 360 feedback process during the time frame of this study. The average age of the participants was 40 with an average length of service of 11 years when they first engaged in this study. Demographically, 25% of the participants were female and 75% male. The participants were 71% from the US and 29% from other countries.

Interventions

The 360 feedback process as defined by Shipper, Hoffman, and Rotondo (2007) was used as the intervention in this study. In brief, the 360 feedback process consists of (1) the collection of data from peers, superiors, direct reports, and self; (2) the reporting of that information to

participants via a report; (3) follow-up training and support; (4) the recollection of the data from peers, superiors, direct reports, and self; and (5) the reporting of that information to participants via a report. This process was repeated four times during the study; thus, four interventions occurred. Detailed description of the training activities and changes made in the program can be found in other studies (e.g., Shipper, Hoffman & Rotondo, 2007; Shipper, 2009).

This process parallels Boyatzis's self-directed learning model (Boyatzis, 1999). This model also pertains to the 360 feedback process. The 360 feedback process as delineated is dynamic and iterative, providing for continuous feedback on skill use to allow for future changes in behaviors.

The 360 instrument used to gather data in this study was The Survey of Management Practices (Wilson & Wilson, 1991). It and a number of other 360 instruments were reviewed by an organizational task force and two were presented to the Chief Executive Officer (CEO) for final selection. The CEO selected the instrument largely based on its face validity (Personal Communication, May 1990).¹

Both research prior to the beginning of the study and during it found the instrument to be psychometrically sound (e.g., Shipper & Davy, 2002). All of the scales within the instrument have been reported in prior studies to exceed Nunnally's (1978) criteria of .70 for reliability. Thus, the instrument had both face and psychometric validity. The theoretical basis for this instrument and its conceptual advantages can be found elsewhere (e.g., Wilson, O'Hare, & Shipper, 1990).

Measures

As previously discussed, The Survey of Management Practices (Form LB) was used to collect data (Wilson & Wilson, 1991). Reasons for its selection were also previously discussed.

Specific skills used in this study—interactive and controlling—were taken from prior research. These measures were developed through cluster analysis and have been found to be stable (e.g., Shipper, 2004). Cronbach's alphas for both self and others' evaluations of interactive skills exceeded .90. Cronbach's alphas for both self and others' evaluations of controlling skills exceeded only .60. The latter two reliability scores are considered low, but acceptable for exploratory research. Self-others' evaluations are measured in two ways. First, self-others' evaluation is measured as the absolute difference between the evaluations of the direct reports for the measures of interactive and controlling skills and the self-reported evaluations of the same skills. Second, self-others' evaluation was measured by using an indicator variable – zero for underestimating and one for overestimating.

To assess managerial performance, four items were asked of the superiors when completing the Survey of Management Practices. Analysis of the scale found Cronbach's alpha equal to .90. This measure was chosen as the criterion variable for Hypotheses 4 and 5 because it is representative of the fourth and ultimate level in Kirkpatrick's (1959) evaluation model.

Data Collection

Data for both the skills and the criterion variable were initially collected with paper instruments. As the study progressed, the data were collected electronically via the Internet.

¹ To protect the anonymity of the company the individual interviewed is not identified.

Procedures were taken to protect the anonymity of the direct reports who responded by using a third party to collect data via mail in the early stages and by a secure server in the later stages of the study. The response rates of the managers, superiors and subordinates were 99.7%, 84% and 63%, respectively.

Analysis

To test the overall effectiveness of the 360 feedback process, one-way analysis of variance was also performed using Duncan's multiple range tests to conduct multiple comparisons over performance evaluations reported for times 1 through 5. To test Hypotheses 1 and 2, one-way analyses of variance were also performed using Duncan's multiple range tests.

The correlations were used to test for multicollinearity among the variables. No two variables had a variance inflation factor (VIF) greater than 1.33. Thus, since variables with VIF's less than 5 are considered to be unsusceptible to multicollinearity, regression analyses were used for testing Hypotheses 3 through 5 (O'Brian, 2007).

RESULTS

The results of the one-way analysis of variance for performance and direct report observations of interactive and controlling skills were all highly statistically significant ($p < .001$). In addition, performance steadily increased from t_1 to t_5 , whereas the absolute value of difference between self versus others' evaluations of both the managers' interactive and controlling skills steadily declined from t_1 to t_5 . Thus, support was found that the 360 feedback process significantly impacted the managers' performance and for H1a and H1b.

Duncan's multiple range tests to conduct multiple comparisons on (1) changes in effectiveness, (2) the absolute values of self and others' evaluations of interactive skills, and (3) the absolute values of self and others' evaluations of controlling skills indicate with the exception of the absolute values of self and others' evaluations of interactive skills significantly different changes did not occur after a single intervention. These tests also showed that significantly different changes did occur after two or three interventions for all three criterion variables.

Hypotheses 2 and 3 are tested using regression. In the regression equations, the dependent variable is either change in interactive or controlling skills and the covariate, the initial level of interactive or controlling skill, respectively. The absolute difference in the self versus others' evaluations of skills and the over versus under estimating of skills are the independent variables. The tests were reported for all four interventions and overall.

All 10 skill equations are highly significant and the covariate in each equation is highly significant with a negative coefficient. The covariates explain the majority of the explained variance in each equation. Only in one of the 10 equations is the absolute difference in the self versus others' evaluations of skills significant. Only in one of the five equations on interactive skills is the over versus under indicator variable significant and then only marginally ($p \leq .10$). In four of the five equations on controlling skills the over versus under indicator variable was significant ($p \leq .05$).

Nine performance equations were significant overall and in each of those equations the covariate is highly significant with eight having negative coefficients. The covariates accounted for the majority of the explained variance in each significant equation. Only in two of the 10

equations is the over versus under indicator variable significant and then only marginally ($p \leq .10$) – one on interactive skills and one on controlling skills. Again, only in one of the 10 equations was the absolute difference in the self versus others' evaluations of skills significant. In the 10 equations, seven of the changes in skills were significantly different – four interactive and three controlling. Two of the three significant coefficients for controlling skills were only at the marginal level ($p \leq .10$). The betas for the first three pairs of equations were higher for interactive than controlling skills and only in the fourth pairing was controlling higher than interactive skills. In the fifth pairing, neither change in skills coefficient was significant so they are not compared.

DISCUSSION

There can be little doubt that the effectiveness of the managers increased over the four iterations of the 360 feedback process in this study. This finding in the one-way analysis of variance on performance is consistent with findings on the use of the 360 feedback process in other studies (e.g., Shipper, 2009). Some reviews cited earlier have not been supportive of the effectiveness of “360 feedback,” but the studies in those reviews did not contain steps three through five of the “360 feedback process” outlined earlier. Whether or not those are included in the management development program may explain the difference in findings.

The Duncan's multiple range tests to conduct multiple comparisons did indicate that changes did occur on all three criterion variables, but not after a single intervention with one exception. These findings could be attributed to skepticism on the part of the early participants and lack of effective follow-up. Initially, the 360 process was inserted into a week-long training program as described earlier. At that point, the participants may have viewed it as a one-shot program and not part of an ongoing process that was going to be examined, supported and held accountable by a succession of CEO's. As discussed earlier, both the way the training was delivered and the follow-up provided changed over the course of this study. Given these changes were based on observations and statistical testing, the follow-up activities may have been more important than the feedback.

The one exception in which change was found to occur after a single intervention was in the absolute values of self and others' evaluations of interactive skills. This change may have occurred because interactive skills are seen to be socially desirable, where controlling skills are not. In addition, it may take more time for changes in skills to impact changes in performance as evaluated by the managers' superiors than the 18 months between interventions. By the end of the study all three criterion variables in these analyses had made, however, significant changes in the expected directions. Expectations that a single intervention of the 360 feedback process will change established levels of performance or differences in evaluations of self and others' evaluations of skills may be unrealistic (e.g., Shipper, Hoffman, & Rotondo, 2007). Studies in the other fields such as neuropsychology (Law, 2004) would suggest that changing in-grained patterns of behavior and reasoning requires intensive training. Management scholars who incorporate neuropsychology into their understanding of management development would also agree that intensive training is needed to change managerial behavior (e.g., Goleman, Boyatzis, & McKee, 2002). These findings support those from reviews of 360 feedback that found little significant effects after a single interventions (e.g., Smither, London & Reilly, 2005). If performance were so easily enhanced through such basic and short-term programs of management development, then becoming a high skilled manager would not be so highly valued.

The results suggest that those who begin with low levels of interactive or controlling skills are more likely to make improvements than those who begin at high levels. Given that it can be shown mathematically that greater change has to occur to make the same percentage increase at low and moderate initial levels, the results are not surprising. The results also suggest that overestimating controlling skills initially is a predictor of increases in controlling skills, whereas neither overestimating nor underestimating interactive skills is a predictor of increase in interactive skills. These findings may be so because those managers who are willing to admit to the use with controlling skills are more willing to improve them than those who do not admit.

In addition, the results suggest that those managers who begin with low levels of performance are more likely to make improvements than those who begin at high levels. The findings also suggest that to improve performance managers should first work on their interactive skills and only after improving those skills should they work on improving controlling skills. This finding is in congruence with advice derived from Task Cycle Theory (Wilson, 2003). The last pair of equations suggests that in the long-term, improvement in managerial performance is possible regardless of the value of the self versus others' evaluation of skills early in the process.

CONCLUSIONS AND IMPLICATIONS FOR PRACTICE

Although this study focused on examining the relationships among self versus others' evaluation of skills, under versus overestimating, and improvement in skills and performance, the findings support the use of a sustained 360 feedback process for effective management development (Shipper, 2009). This conclusion and implication are supported by the findings in other research (Seifert, Yukl, & McDonald, 2003). Overall, the results suggest that managers do care about how others evaluate their skills and that they do adjust their self-evaluations to reduce the differences while at the same time working to improve their skills. In addition, the findings suggest that managers who are evaluated to have low skills will improve their skills even more than people with moderate or high skills. This may be true only under conditions, as in this study, where the participating managers are given follow-up support.

These findings are in agreement with studies on what it takes to make meaningful changes in other fields of human behavior (e.g., Law, 2004). To expect meaningful changes to occur simply from the process of feedback without providing additional assistance and a supportive environment is probably naïve at best.

There are also implications for executives wanting to improve the effectiveness of their managers. First, the chief executive officer's and other key executives' participation and active support are needed throughout the process. This cannot be demonstrated statistically, but it was one of the conditions that existed in the organization where this study occurred. Second, it is probably not going to happen based on one-shot participation in 360 feedback. Third, creating a supportive environment and activities at the local level will be more effective than centralized activities. Fourth, meaningful change yields a competitive advantage. Previously, this finding has been demonstrated monetarily (Shipper & Neck, 1994). Thus, a sustained 360 process can be a valuable business practice that leads to sustainable improvements in managerial effectiveness.

REFERENCES AND TABLES AVAILABLE FROM THE AUTHOR

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